

MAGNETIC RESONANCE IMAGING

LIST OF CONTENTS AUTHOR INDEX KEYWORD INDEX

Volume 5, 1987

VOLUME 5, NUMBER 1

1987

CONTENTS

● ORIGINAL CONTRIBUTIONS

Application of MRI to the Analysis of Speech Production

T. Baer, J. C. Gore, S. Boyce, and P. W. Nye

1

**Attenuation of Morphine-Induced Analgesia in Mice by Exposure to Magnetic Resonance Imaging:
Separate Effects of the Static, Radiofrequency and Time-Varying Magnetic Fields**

Frank S. Prato, Klaus-Peter Ossenkopp, Martin Kavaliers, Edmund Sestini, and G. Campbell Teskey

9

Magnetic Resonance Imaging in Neurosarcoidosis

Alina Greco and Robert E. Steiner

15

**In Vivo Estimation of Relaxation Processes in Benign Hyperplasia and Carcinoma of the
Prostate Gland by Magnetic Resonance Imaging**

L. Kjaer, C. Thomsen, P. Iversen, and O. Henriksen

23

Sampling Time Effects on Signal-to-Noise and Contrast-to-Noise Ratios in Spin-Echo MRI

R. Edward Hendrick

31

Techniques of Non-Orthogonal Magnetic Resonance Imaging and Its Clinical Application

Madan V. Kulkarni, Ronald R. Price, Snehal D. Mehta, Murray M. Mazer,
Oscar W. Wolfe, and C. Leon Partain

39

● RESEARCH ARTICLE

**Spin-Echo Fluorine Magnetic Resonance Imaging at 2 T: In Vivo Spatial Distribution of Halothane
in the Rabbit Head**

W. M. Chew, M. E. Moseley, P. A. Mills, D. Sessler, R. González-Mendez, T. L. James, and L. Litt

51

| | |
|---|----|
| Gated Acquisition of MR Images of the Thorax: Advantages for the Study of the Hila and Mediastinum | |
| Alexander S. Mark, Mark L. Winkler, Mark Peltzer, Leon Kaufmann, and Charles B. Higgins | 57 |

| | |
|---|----|
| Ingested Manganese Chloride as a Contrast Agent for Magnetic Resonance Imaging | |
| David A. Cory, Douglas J. Schwartzentruber, and Bruce H. Mock | 65 |

● *SPECIAL ARTICLE*

| | |
|--|----|
| A Critique of the Concept of MRI Centers | |
| A. Everette James, Jr., C. L. Partain, R. J. Hamilton,, S. Baum, M. Silbiger, T. Greeson, and John C. Gore | 71 |

● *BOOK REVIEW*

| | |
|---|----|
| Diagnostic Patient Studies in Surgery, Edited by Bernard Sigel | |
| Francis W. Smith | 77 |

| | |
|-----------------------------|----|
| ● <i>CALENDAR OF EVENTS</i> | 79 |
|-----------------------------|----|

| | |
|-----------------------|----|
| ● <i>ANNOUNCEMENT</i> | 81 |
|-----------------------|----|

● *NEW PATENTS*

| | |
|---|---|
| New Patents and Published Patent Applications from the United States and over 30 Other Countries | I |
|---|---|

| | |
|--------------------|------|
| VOLUME 5, NUMBER 2 | 1987 |
|--------------------|------|

CONTENTS

● *ORIGINAL CONTRIBUTIONS*

| | |
|---|----|
| MRI in Staging of Endometrial and Cervical Carcinoma | |
| Marcia C. Fishman Javitt, Harry L. Stein, and John L. Lovecchio | 83 |

| | |
|---|----|
| Equivalent Circuit for Coil-Patient Interactions in Magnetic Resonance Imaging | |
| John G. van Heteren, R. Mark Henkelman, and Michael J. Bronskill | 93 |

| | |
|--|-----|
| Application of an Equivalent Circuit to Signal-to-Noise Calculations in MRI | |
| John G. van Heteren, R. Mark Henkelman, and Michael J. Bronskill | 101 |

| | |
|---|-----|
| Gadolinium-DTPA Enhanced MR Imaging of Intramuscular Abscesses | |
| H. Paaanen, W. Grodd, D. Revel, B. Engelstad, and R. C. Brasch | 109 |

| | |
|---|-----|
| Maximizing Signal-to-Noise and Contrast-to-Noise Ratios in Flash Imaging | |
| R. Edward Hendrick, J. Bruce Kneeland, and David D. Stark | 117 |

| | |
|---|-----|
| The Effect of Magnetic Resonance Imaging on Human Cognition | |
| Jack Sweetland, Andrew Kertesz, Frank S. Prato, and Kimberly Nantau | 129 |

| | |
|--|-----|
| Multiple Spin Echo Imaging and Quantitative Relaxation Measurements of Pulmonary Edema D. M. Phillips, J. A. Lunt, S. F. P. Man, and P. S. Allen | 137 |
|--|-----|

| | |
|---|-----|
| Proton Relaxation Enhancement by Manganese(III)TPPS₄ in a Model Tumor System R. J. Fiel, T. M. Button, S. Gilani, E. H. Mark, D. A. Musser, R. M. Henkelman, M. J. Bronskill, and J. G. van Heteren | 149 |
|---|-----|

● *TECHNICAL NOTE*

| | |
|--|-----|
| Chemical Shift-Induced Amplitude Modulations in Images Obtained with Gradient Refocusing Felix W. Wehrli, Thomas G. Perkins, Ann Shimakawa, and Felice Roberts | 157 |
|--|-----|

| | |
|-----------------------------|-----|
| ● <i>CALENDAR OF EVENTS</i> | 159 |
|-----------------------------|-----|

| | |
|-----------------------|-----|
| ● <i>ANNOUNCEMENT</i> | 161 |
|-----------------------|-----|

| | |
|--------------------|------|
| VOLUME 5, NUMBER 3 | 1987 |
|--------------------|------|

CONTENTS

● *SPECIAL EDITORIAL*

| | |
|---|-----|
| Glossary of MR Terms: American College of Radiology Leon Axel | 163 |
|---|-----|

● *ORIGINAL CONTRIBUTIONS*

| | |
|--|-----|
| Fluorine-19 NMR Spectroscopic Studies of the Metabolism of 5-Fluorouracil in the Liver of Patients Undergoing Chemotherapy Walter Wolf, Michael J. Albright, Michael S. Silver, Horst Weber, Ulrich Reichardt and Rolf Sauer | 165 |
|--|-----|

| | |
|--|-----|
| Magnetic Resonance Imaging of Gynecological Anatomy Shirley McCarthy | 171 |
|--|-----|

| | |
|--|-----|
| Magnetic Resonance Imaging in "Housemaid's Knee" (Prepatellar Bursitis) Errol M. Bellon, Damon C. Sacco, David A. Steiger, and Paul E. Coleman | 175 |
|--|-----|

| | |
|---|-----|
| Magnetic Resonance Imaging at 0.02 T in Clinical Practice and Research Ingrid Agartz, Jan Sääf, Lars-Olof Wahlund, and Lennart Wetterberg | 179 |
|---|-----|

| | |
|--|-----|
| Temperature Dependence of Proton Relaxation Times In Vitro T.R. Nelson and S.M. Tung | 189 |
|--|-----|

| | |
|---|-----|
| Rapid Calculation of T1 Using Variable Flip Angle Gradient Refocused Imaging Evan K. Fram, Robert J. Herfkens, G. Allan Johnson, Gary H. Glover, John P. Karis, Ann Shimakawa, Tom G. Perkins, and Norbert J. Pelc | 201 |
|---|-----|

| | |
|--|-----|
| Methodology for the Measurement and Analysis of Relaxation Times in Proton Imaging James R. MacFall, Felix W. Wehrli, Robert K. Breger, and G. Allan Johnson | 209 |
|--|-----|

| | |
|---|-----|
| Biodistribution of GdCL₃ and Gd-DTPA and Their Influence on Proton Magnetic Relaxation in Rat Tissues | 221 |
| James L. Barnhart, Norbert Kuhnert, Douglas A. Bakan, and Robert N. Berk | |
| Elementary Single Turn Solenoids Used as the Transmitter and Receiver in Magnetic Resonance Imaging | 233 |
| Joseph P. Hornak, Jerzy Szumowski, and Robert G. Bryant | |
| ● <i>TECHNICAL NOTE</i> | |
| Whole Body Slotted Tube Resonator (STR) for Proton NMR Imaging at 2.0 Tesla | 239 |
| D. H. Hong, S. W. Lee, J. W. Ra, and Z. H. Cho | |
| ● <i>LETTER TO THE EDITORS</i> | 245 |
| ● <i>ERRATUM</i> | 247 |
| ● <i>ANNOUNCEMENT</i> | 249 |
| ● <i>NEW PATENTS</i> | |
| New Patents and Published Patent Applications from the United States and Over 30 Other Countries | I |

| | |
|--------------------|------|
| VOLUME 5, NUMBER 4 | 1987 |
|--------------------|------|

CONTENTS

| | |
|--|-----|
| ● <i>ORIGINAL CONTRIBUTIONS</i> | |
| Prolonged Bone Marrow T_1-Relaxation in Acute Leukaemia. In Vivo Tissue Characterization by Magnetic Resonance Imaging | |
| Carsten Thomsen, Peter Grundtvig Sorensen, Hans Karle, Per Christoffersen, and Ole Henriksen | 251 |
| Heterogeneity of Regional Cerebral Glucose Metabolism Demonstrated in Situ in Rat Brain by ^{19}F NMR Rotating Frame Zeugmatography: One Dimensional Chemical Shift Imaging of Normal and Gliosarcoma Implanted Brain | |
| Tsutomu Nakada and Ingrid L. Kwee | 259 |
| Water Phases in Rat Striated Muscles as Determined by T_2 Proton NMR Relaxation Times | |
| E. Le Rumeur, J. De Certaines, P. Toulouse, and P. Rochcongar | 267 |
| An NMR Study of Lithium Responding Manic Depressive Patients | |
| J. A. O. Besson, J. G. Henderson, E. I. Foreman, and F. W. Smith | 273 |
| Oxygen-Sensitive ^{19}F NMR Imaging of the Vascular System In Vivo | |
| Joel E. Fishman, Peter M. Joseph, Thomas F. Floyd, Biseanath Mukherji, and Henry A. Sloviter | 279 |
| Operational Safety Issues in MRI | |
| Raymond E. Gangarosa, Janet E. Minnis, Janine Nobbe, Duane Praschan, and Richard W. Genberg | 287 |

| | |
|--|-----|
| Left Ventricular Aneurysm in Short Axis: A Comparison of Magnetic Resonance, Ultrasound and Thallium-201 Spect Images | |
| Masood Ahmad, Raleigh F. Johnson, Jr., H. Daniel Fawcett, Melvyn H. Schreiber | 293 |
| Magnetic Field Mapping in NMR Imaging | |
| M. R. Willcott, III, G. L. Mee, and J. P. Chesick | 301 |
| ● CASE REPORT | |
| MRI of Peroneal Nerve Entrapment due to a Ganglion Cyst | |
| John Leon and Gary Marano | 307 |
| ● BOOK REVIEWS | |
| Functional Studies Using N.M.R. , Edited by V. R. McCready, M. Leach and P. J. Ell | |
| <i>Reviewed by Francis W. Smith</i> | 311 |
| NMR in Biology and Medicine , by Shu Chien and Chien Ho | |
| <i>Reviewed by Francis W. Smith</i> | 311 |
| Le Chant Des Protons (L'I.R.M. Sans Peine?) , by Alain Coussement | |
| <i>Reviewed by Francis Smith</i> | 312 |
| A Machine Called Indomitable , by Sonny Kleinfeld | |
| <i>Reviewed by Dr. Robert Byck</i> | 312 |
| ● ANNOUNCEMENT | 315 |

| | |
|--------------------|------|
| VOLUME 5, NUMBER 5 | 1987 |
|--------------------|------|

CONTENTS

● ORIGINAL CONTRIBUTIONS

| | |
|--|-----|
| Magnetic Resonance Imaging in the Diagnosis of the Cranio-Cervical Manifestations of the Mucopolysaccharidoses | |
| M. V. Kulkarni, J. C. Williams, J. W. Yeakley, J. L. Andrews, C. B. McArdle, P. A. Narayana, R. R. Howell, and A. J. Jonas | 317 |
| Egg-Triggered Arterial Flash-MR Flow Measurement Using an External Standard | |
| D. Matthaei, A. Haase, K. D. Merboldt, W. Hänicke, and M. Deimling | 325 |
| The Rotator Cuff Tear: MR Evaluation | |
| John D. Reeder and Samuel Andelman | 331 |
| In Vitro Adrenal Cortex Lesions Characterization by NMR Spectroscopy | |
| A. Leroy-Willig, J. C. Roucayrol, J. P. Luton, J. Courtieu, N. Niesenbaum, and A. Louvel | 339 |
| 3D Reconstruction of the Brain from Magnetic Resonance Images Using a Connectivity Algorithm | |
| H. E. Cline, C. L. Dumoulin, H. R. Hart, Jr., W. E. Lorensen, and S. Ludke | 345 |

| | |
|--|-----|
| The Influence of Macromolecular Polymerization on Spin-Lattice Relaxation of Aqueous Solutions Gary D. Fullerton, Mitchell F. Finnie, Keithley E. Hunter, Virginia A. Ord, and Ivan L. Cameron | 353 |
| The Value of MRI in Evaluating Perirectal and Pelvic Disease Marcia C. Fishman-Javitt, John L. Lovecchio, Bruce Javors, James B. Naidich, Matthew McKinley, and Harry L. Stein | 371 |
| Multi-Exponential Relaxation Analysis with MR Imaging and NMR Spectroscopy Using Fat-Water Systems R. L. Kamman, C. J. G. Bakker, P. van Dijk, G. P. Stomp, A. P. Heiner, and H. J. C. Berendsen | 381 |
| High Resolution Proton Magnetic Resonance Spectroscopy of Human Brain and Liver M. Bárány, D. G. Spigos, E. Mok, P. N. Venkatasubramanian, A. C. Wilbur, and B. G. Langer | 393 |
| Visualization of Myocardial Infarction and Subsequent Coronary Reperfusion with MRI Using a Dog Model Alex M. Aisen, Andrew J. Buda, Rainer J. Zotz, and Kenneth A. Buckwalter | 399 |
| ● CASE REPORTS | |
| Middle Ear Prosthesis: Significance in Magnetic Resonance Imaging John A. Leon and O. F. Gabriele | 405 |
| MR Imaging of Multiple Hepatic Cysts in a Patient with Polycystic Liver Disease Peter L. Davis, Emanuel Kanal, Gregory N. Farnum, David H. Van Thiel, and Shunzaburo M. Iwatsuki | 407 |
| ● ANNOUNCEMENT | 413 |
| ● NEW PATENTS | |
| New Patents and Published Patent Applications from the United States and Over 30 Other Countries | I |

VOLUME 5, NUMBER 6

1987

CONTENTS

● ORIGINAL CONTRIBUTIONS

| | |
|---|-----|
| Spin-Lattice Relaxation Times of Bound Water—Its Determination and Implications for Tissue Discrimination Yoshiki Kaneoke, Masahiro Furuse, Suguru Inao, Katsuyoshi Saso, Kazuo Yoshida, Yoshimasa Motegi, Motomu Mizuno, and Akira Izawa | 415 |
| The Efficacy of Tilted Axial MRI of the CNS Val M. Runge, Mark A. Osborne, Michael L. Wood, Samuel M. Wolpert, Eddie Kwan, and Dean M. Kaufman | 421 |
| Avascular Necrosis of the Femoral Head: Early MRI Detection and Radiological Correlation Javier Beltran, Jane M. Burk, Leigh J. Herman, Robert N. Clark, Wilhelm A. Zuelzer, Marvin R. Freedy, and Sheldon Simon | 431 |

| | |
|--|-----|
| Magnetic Field Effects on Surgical Ligation Clips Mark A. Brown, Joseph A. Carden, R. Edward Coleman, Ray McKinney, Jr., and Leonard D. Spicer | 443 |
| Optimization of Spoiler Gradients in FLASH MRI Michael L. Wood, Michael Silver, and Val M. Runge | 455 |
| Human Cranial CSF Volumes Measured by MRI: Sex and Age Influences R. Grant, B. Condon, A. Lawrence, D. M. Hadley, J. Patterson, I. Bone, and G. M. Teasdale | 465 |
| Changes in Proton T1 in Dog Brains Due to the Administration of Haloperidol T. Fujimoto, T. Nakano, M. Fujii, A. Okada, K. Harada, Y. Kokoyama, T. Uchida, T. Tsuji, A. Igata, and T. Asakura | 469 |
| Evaluation of Steady and Pulsatile Flow with Dynamic MRI Using Limited Flip Angles and Gradient Refocused Echoes Avery J. Evans, Laurence W. Hedlund, Robert J. Kerfkens, Joseph A. Utz, Evan K. Fram, and Russell A. Blinder | 475 |
| The Effect of Dexamethasone on Tissue Water Distribution and Proton Relaxation in Panc02 Tumors Paul G. Braunschweiger, Kenneth Reynolds, Thomas R. Nelson, and Ellen Maring | 483 |
| ● <i>CASE REPORTS</i> | |
| MRI Appearance of Disseminated Osseous Tuberculosis Stephen F. Quinn, William Murray, James Prochaska, Courtney Cochran, and Robert Clark | 493 |
| MRI, CT, and Plain Film Appearance of Anterior Spina Bifida H. Duffrin, R. Auer, P. Moolsintong, S. Srivisal, J. McNamara, E. Zukowski, and T. Reh | 499 |
| ● <i>LETTERS TO THE EDITORS</i> | 505 |
| ● <i>ABSTRACTS</i> | |
| 1987 Topical Conference on Fast Magnetic Resonance Imaging Techniques, May 15-17, 1987, Cleveland, Ohio | 509 |
| ● <i>ANNOUNCEMENT</i> | 561 |
| ● <i>LIST OF CONTENTS, AUTHOR INDEX, KEYWORD INDEX, VOLUME 5, 1987</i> | 563 |
| ● <i>NEW PATENTS</i> | |
| New Patents and Published Patent Applications from the United States and Over 30 Other Countries | I |

